FIG.1

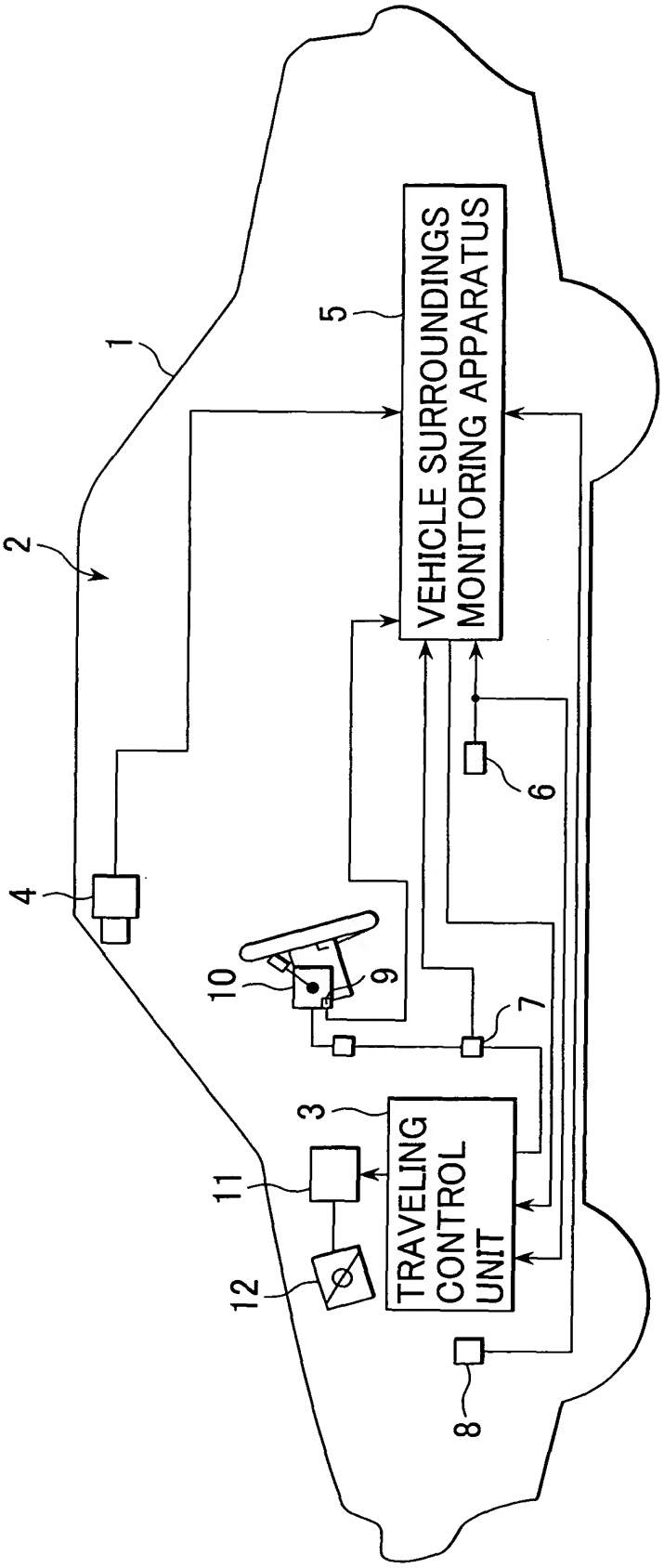

VEHICLE SURROUNDINGS MONITORING APPARATUS
TRAVELING CONTROL UNIT
1
2
3
4
5
6
7
8
9
10
11
12

FIG.2

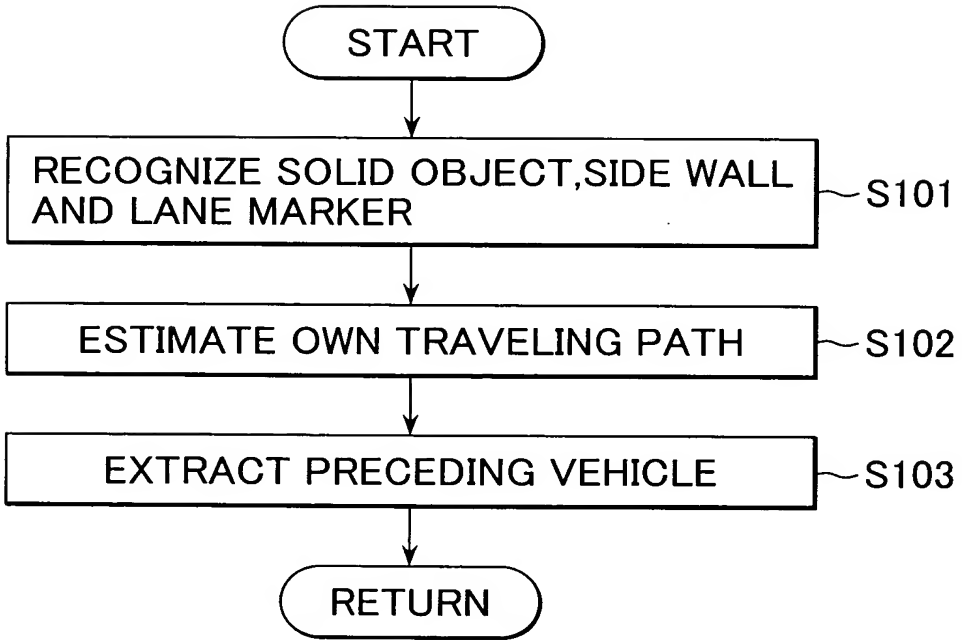

START
RECOGNIZE SOLID OBJECT,SIDE WALL AND LANE MARKER
S101
ESTIMATE OWN TRAVELING PATH
S102
EXTRACT PRECEDING VEHICLE
S103
RETURN

FIG.3

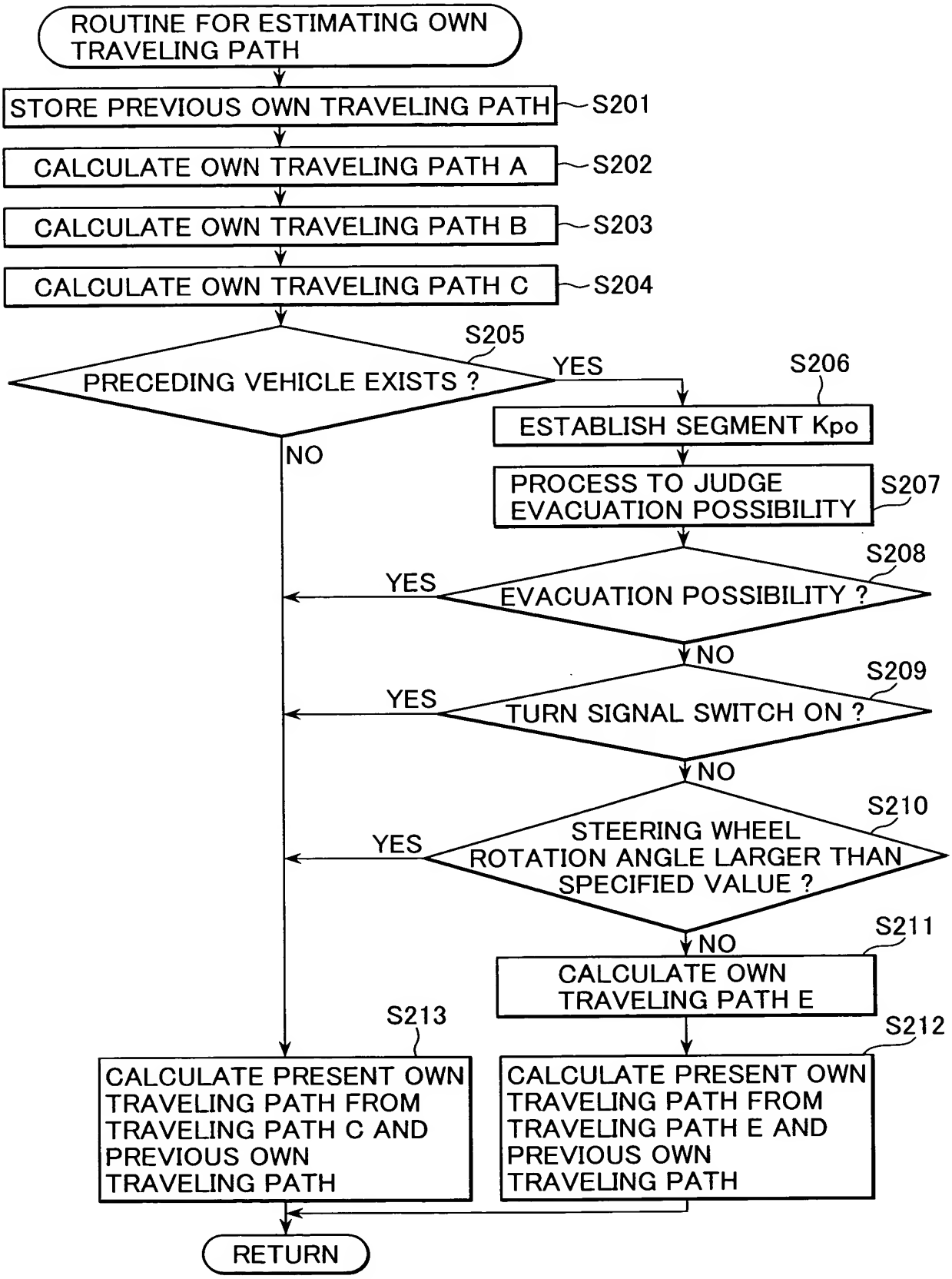

ROUTINE FOR ESTIMATING OWN TRAVELING PATH
STORE PREVIOUS OWN TRAVELING PATH
S201
CALCULATE OWN TRAVELING PATH A
S202
CALCULATE OWN TRAVELING PATH B
S203
CALCULATE OWN TRAVELING PATH C
S204
S205
PRECEDING VEHICLE EXISTS ?
YES
S206
ESTABLISH SEGMENT Kpo
NO
PROCESS TO JUDGE EVACUATION POSSIBILITY
S207
S208
YES
EVACUATION POSSIBILITY ?
NO
S209
YES
TURN SIGNAL SWITCH ON ?
NO
S210
YES
STEERING WHEEL ROTATION ANGLE LARGER THAN SPECIFIED VALUE ?
NO
S211
CALCULATE OWN TRAVELING PATH E
S213
S212
CALCULATE PRESENT OWN TRAVELING PATH FROM TRAVELING PATH C AND PREVIOUS OWN TRAVELING PATH
CALCULATE PRESENT OWN TRAVELING PATH FROM TRAVELING PATH E AND PREVIOUS OWN TRAVELING PATH
RETURN

FIG.4

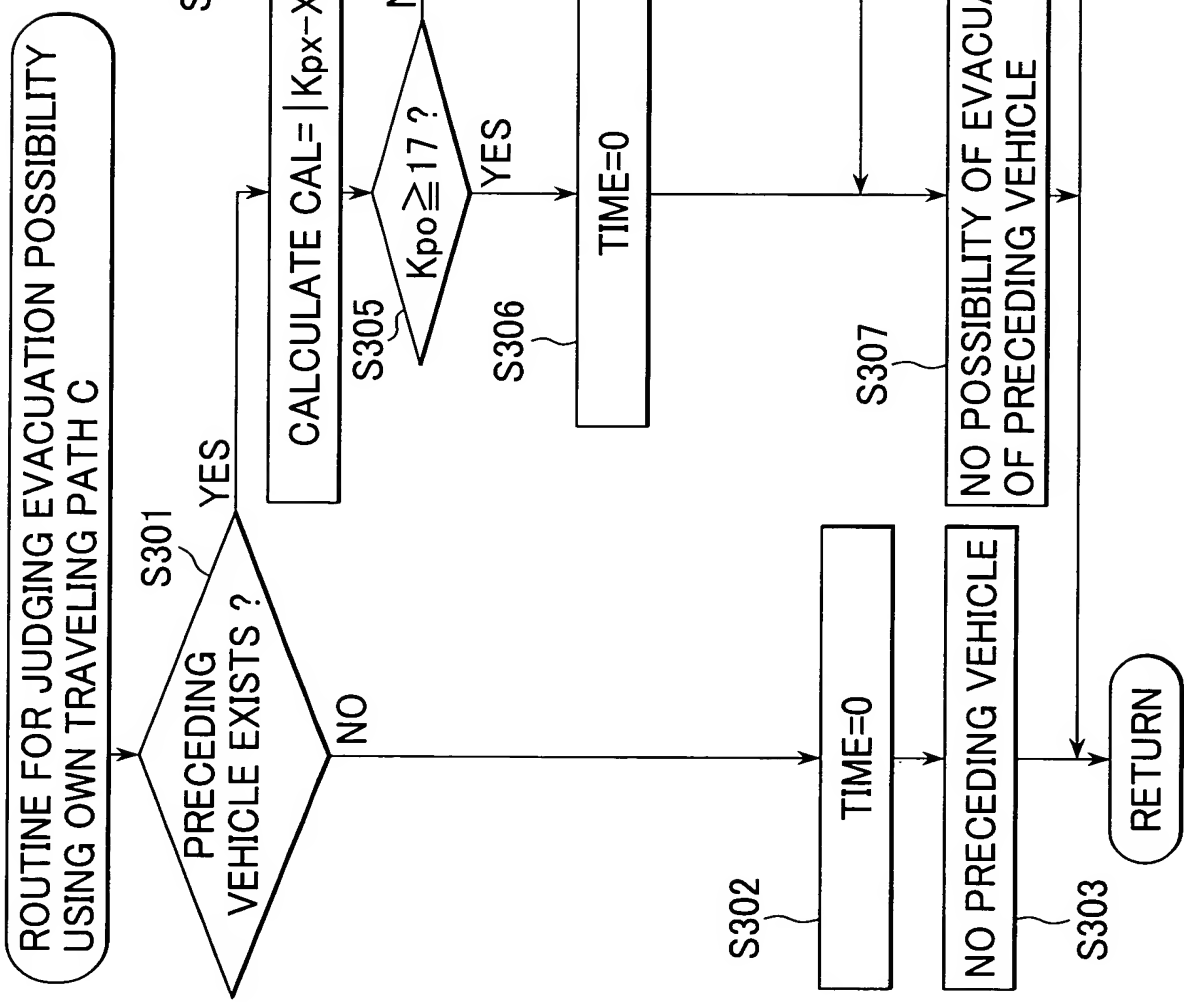

ROUTINE FOR JUDGING EVACUATION POSSIBILITY USING OWN TRAVELING PATH C
S301
PRECEDING VEHICLE EXISTS ?
YES
NO
S304
CALCULATE CAL= |Kpx−Xpx|
S305
Kpo≧17 ?
YES
NO
S306
TIME=0
S307
NO POSSIBILITY OF EVACUATION OF PRECEDING VEHICLE
S308
ESTABLISH TIME ACCORDING TO POSITION OF PRECEDING VEHICLE
S309
ESTABLISH TIME ACCORDING TO OBJECTS OTHER THAN PRECEDING VEHICLE
S310
TIME≧100 ?
YES
NO
S311
POSSIBILITY OF EVACUATION OF RECEDING VEHICLE
S302
TIME=0
S303
NO PRECEDING VEHICLE
RETURN

FIG.5A

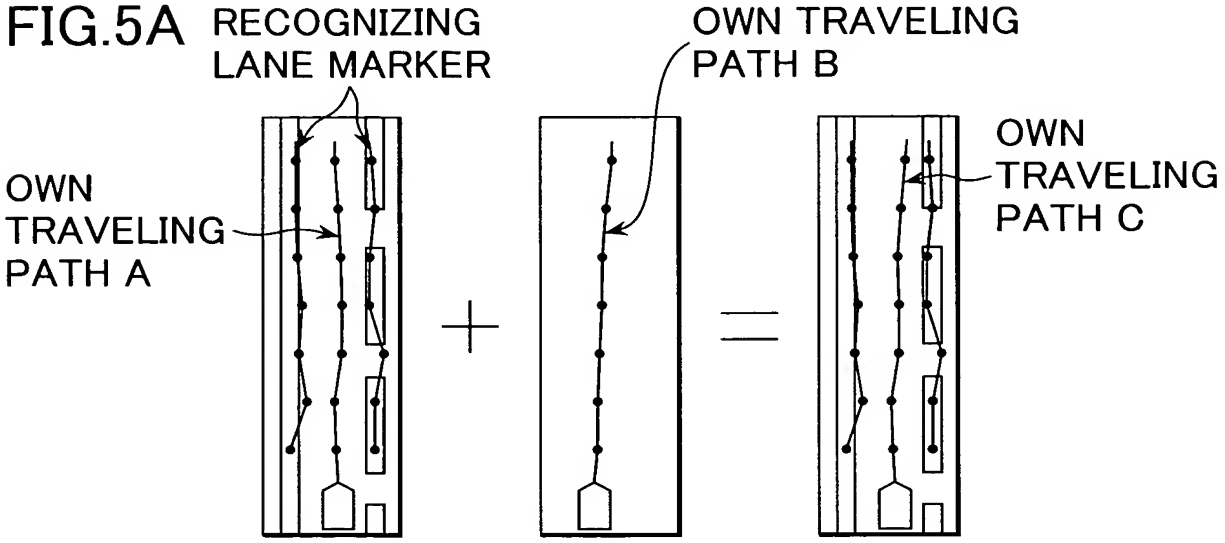


FIG.5B

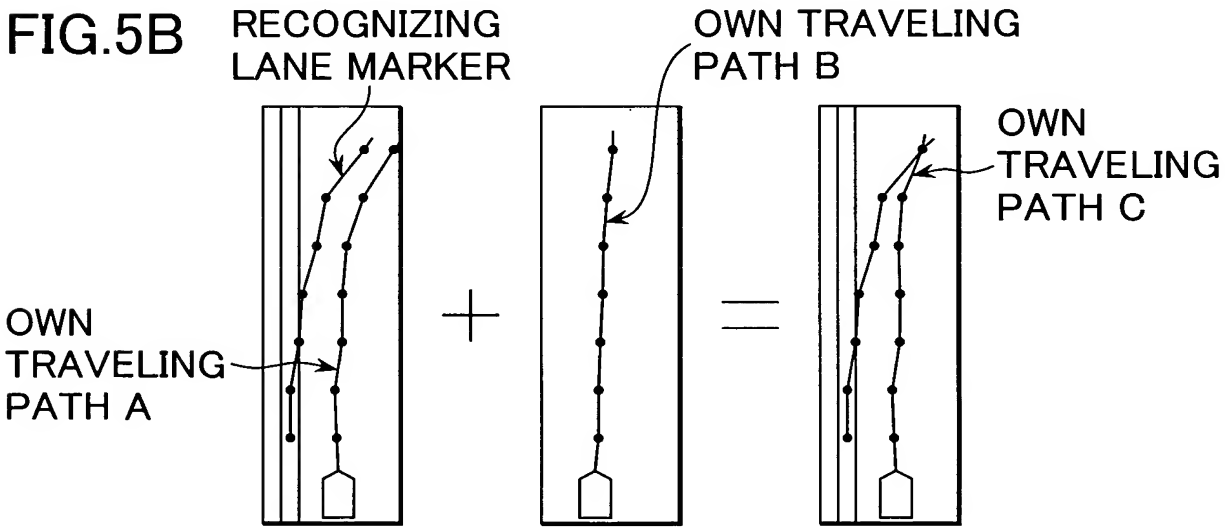


FIG.5C

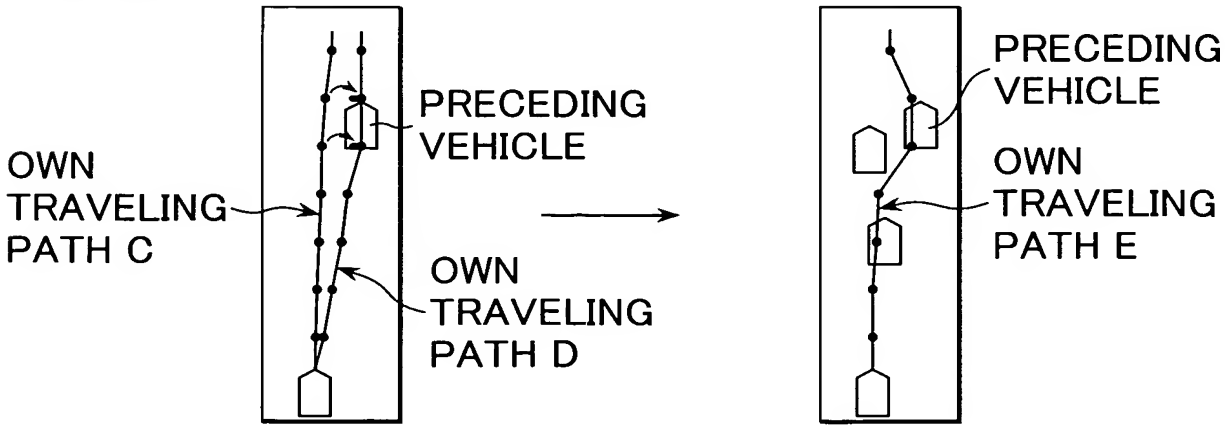
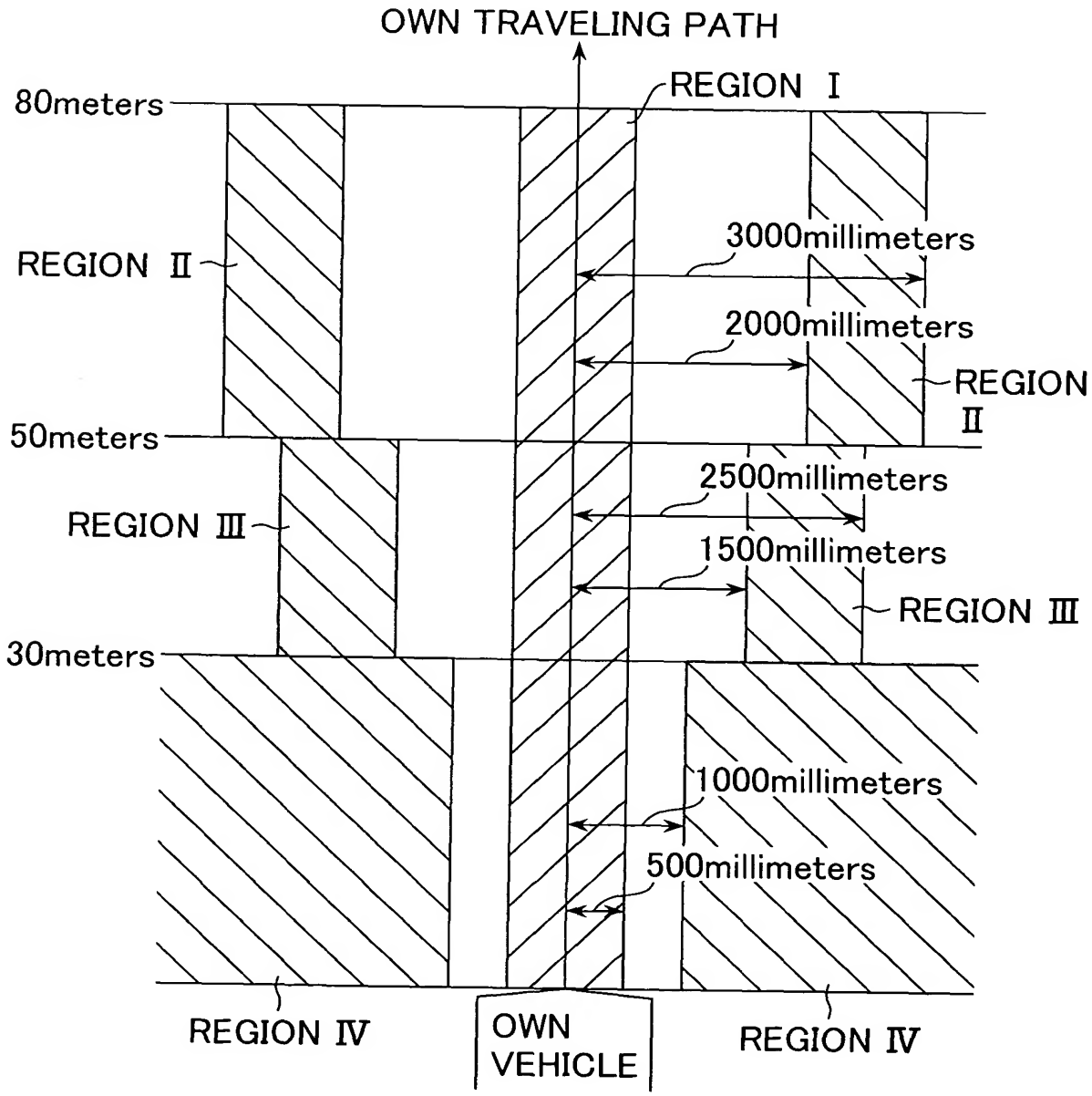


FIG.6


OWN TRAVELING PATH
REGION I
80meters
REGION II
3000millimeters
2000millimeters
REGION II
50meters
2500millimeters
REGION III
1500millimeters
REGION III
30meters
1000millimeters
500millimeters
REGION IV
OWN VEHICLE
REGION IV